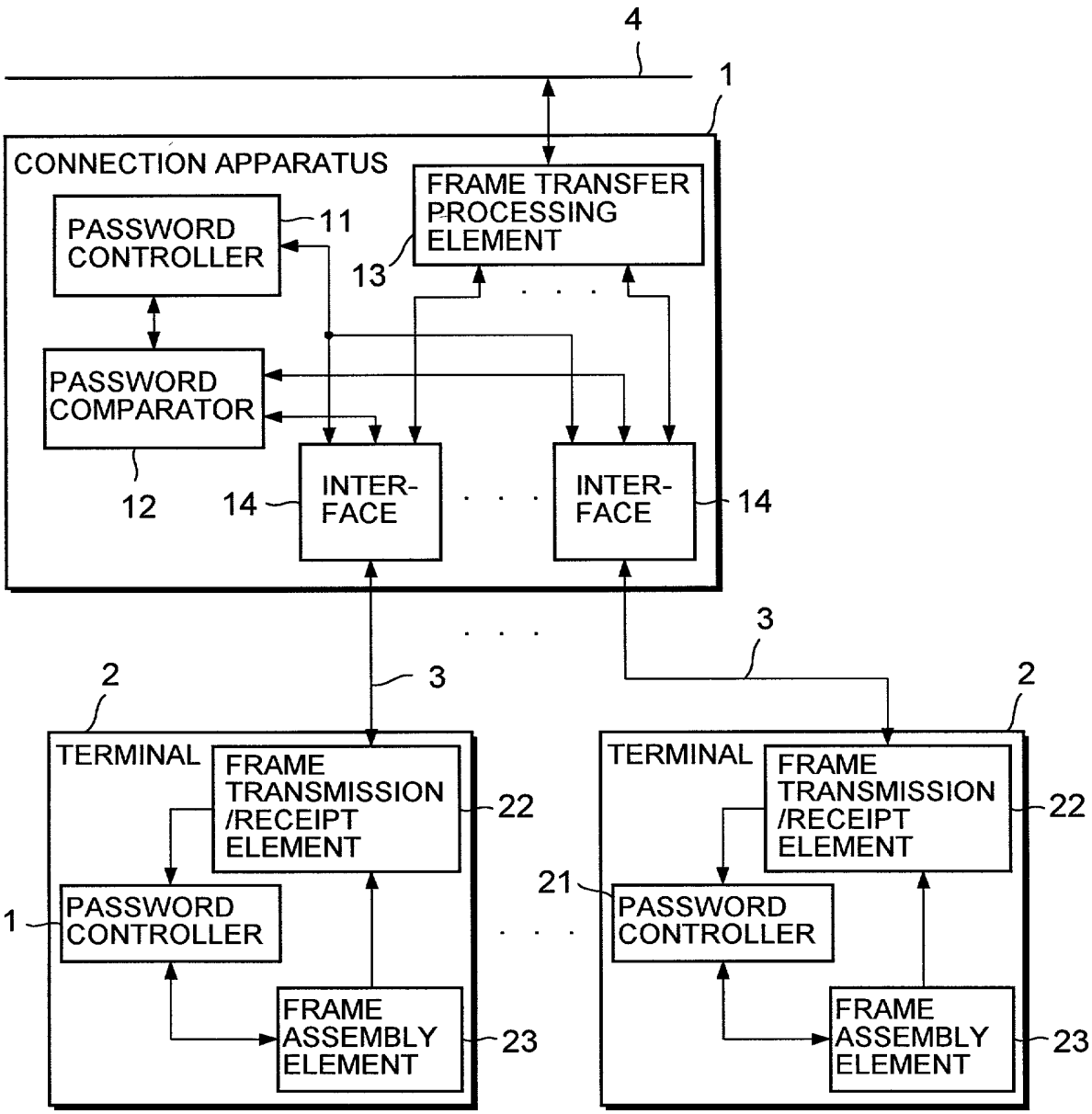
4
1
CONNECTION APPARATUS
PASSWORD CONTROLLER
11
FRAME TRANSFER PROCESSING ELEMENT
13
PASSWORD COMPARATOR
12
14
INTER-FACE
INTER-FACE
14
3
3
2
2
TERMINAL
FRAME TRANSMISSION /RECEIPT ELEMENT
22
21
PASSWORD CONTROLLER
FRAME ASSEMBLY ELEMENT
23
TERMINAL
FRAME TRANSMISSION /RECEIPT ELEMENT
22
21
PASSWORD CONTROLLER
FRAME ASSEMBLY ELEMENT
23

Fig. 1

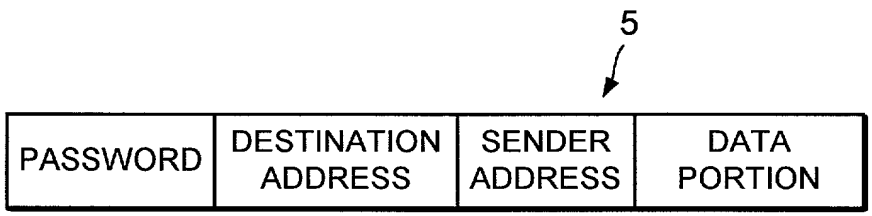
5
PASSWORD
DESTINATION ADDRESS
SENDER ADDRESS
DATA PORTION

Fig. 2

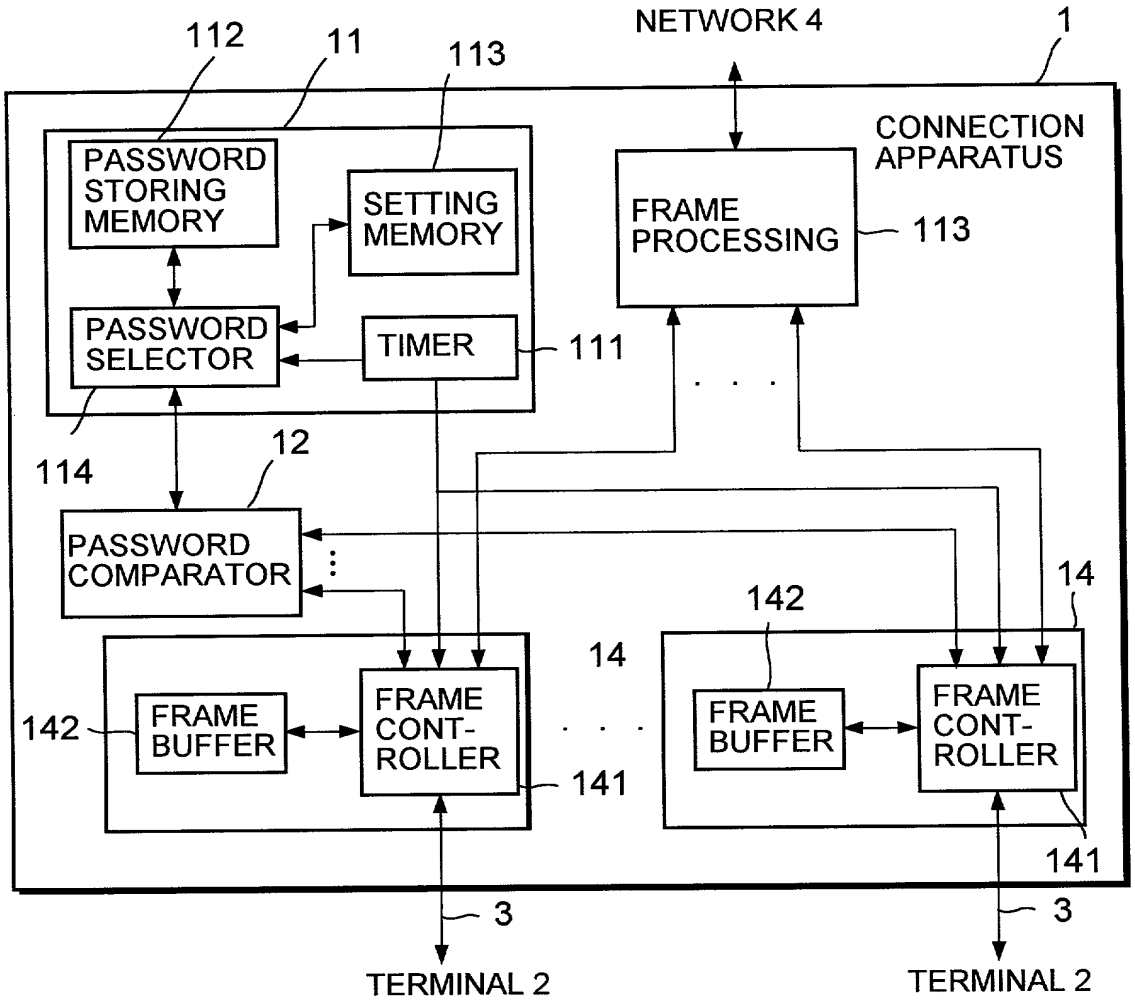
NETWORK 4
1
112
11
113
CONNECTION APPARATUS
PASSWORD STORING MEMORY
SETTING MEMORY
FRAME PROCESSING
113
PASSWORD SELECTOR
TIMER
111
114
12
PASSWORD COMPARATOR
14
142
14
142
FRAME BUFFER
FRAME CONT-ROLLER
141
FRAME BUFFER
FRAME CONT-ROLLER
141
3
3
TERMINAL 2
TERMINAL 2

Fig. 3

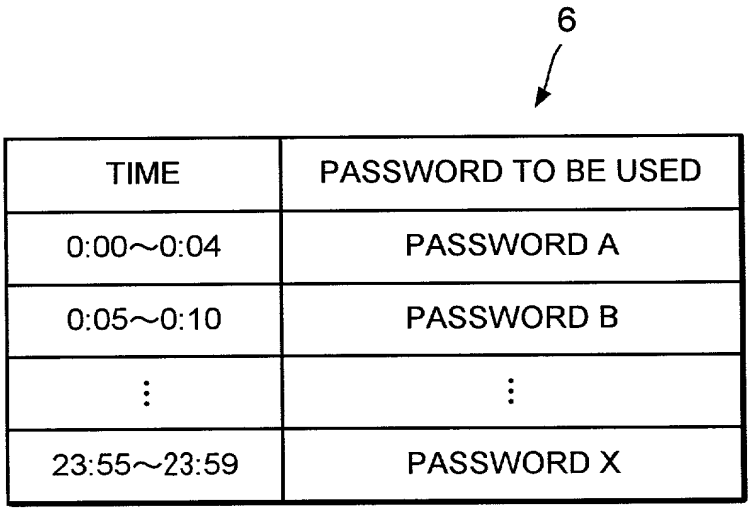
6
TIME
PASSWORD TO BE USED
0:00~0:04
PASSWORD A
0:05~0:10
PASSWORD B
23:55~23:59
PASSWORD X

Fig. 4

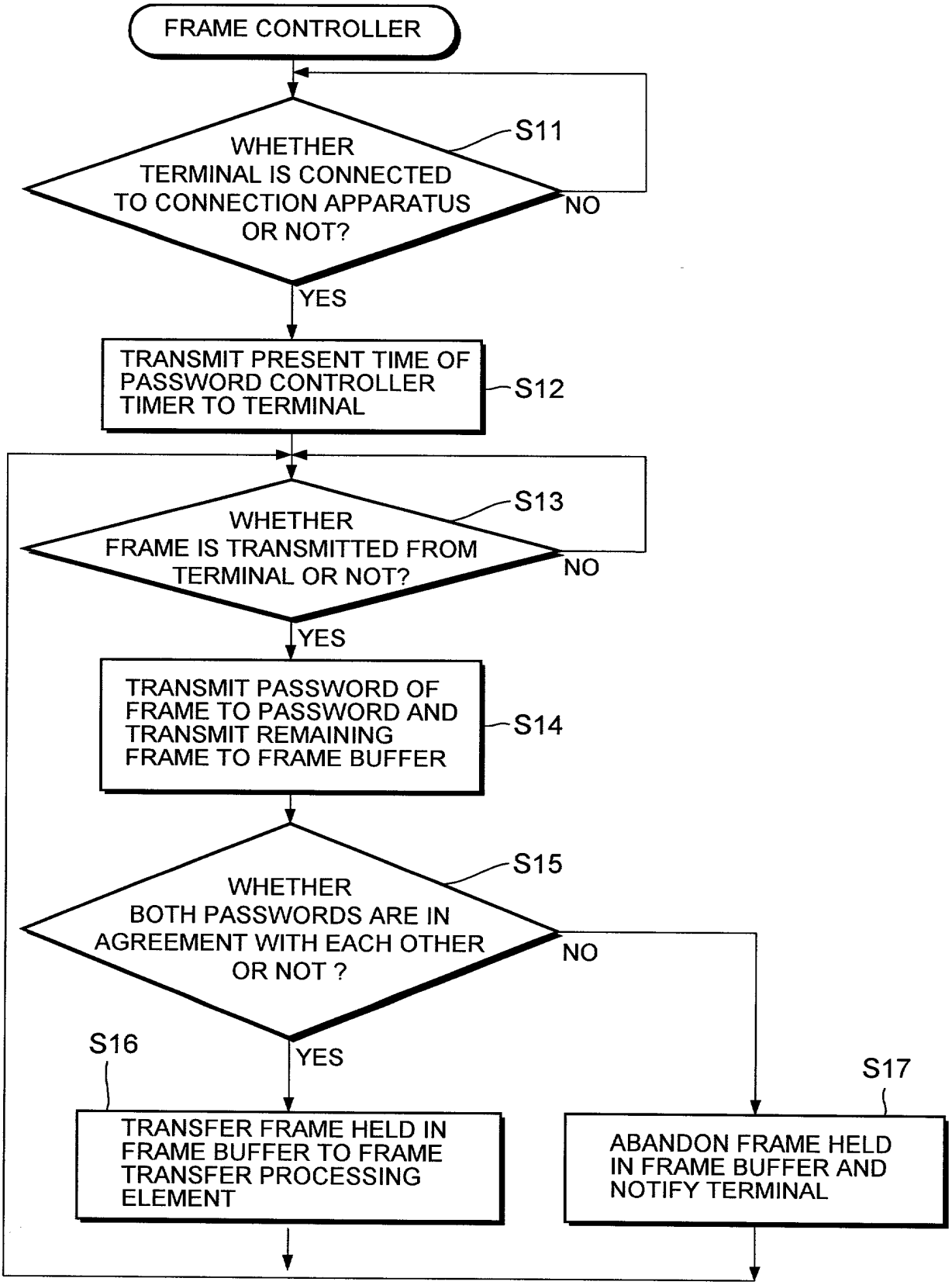
FRAME CONTROLLER
WHETHER TERMINAL IS CONNECTED TO CONNECTION APPARATUS OR NOT?
S11
NO
YES
TRANSMIT PRESENT TIME OF PASSWORD CONTROLLER TIMER TO TERMINAL
S12
WHETHER FRAME IS TRANSMITTED FROM TERMINAL OR NOT?
S13
NO
YES
TRANSMIT PASSWORD OF FRAME TO PASSWORD AND TRANSMIT REMAINING FRAME TO FRAME BUFFER
S14
WHETHER BOTH PASSWORDS ARE IN AGREEMENT WITH EACH OTHER OR NOT ?
S15
NO
YES
S16
TRANSFER FRAME HELD IN FRAME BUFFER TO FRAME TRANSFER PROCESSING ELEMENT
S17
ABANDON FRAME HELD IN FRAME BUFFER AND NOTIFY TERMINAL

Fig. 5

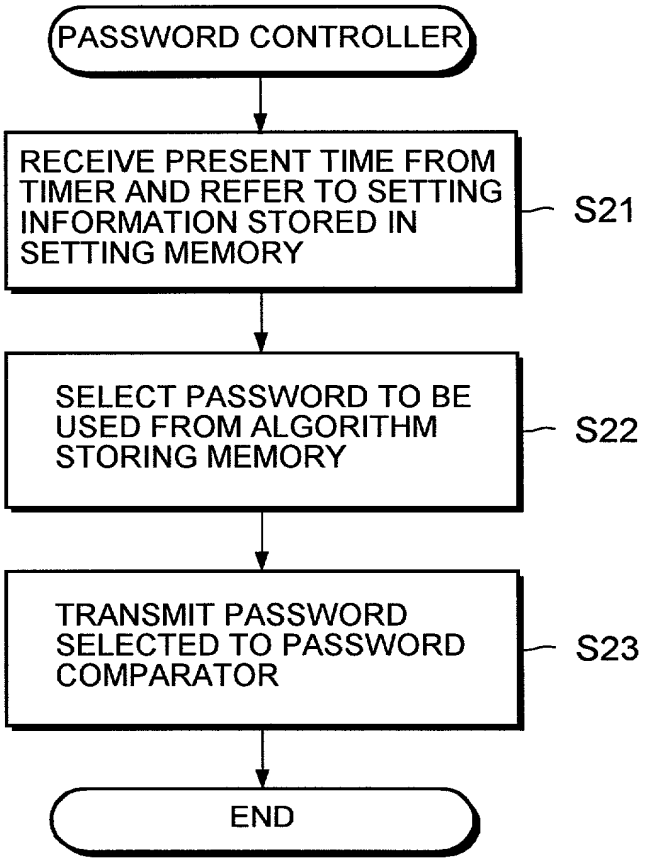
PASSWORD CONTROLLER
RECEIVE PRESENT TIME FROM TIMER AND REFER TO SETTING INFORMATION STORED IN SETTING MEMORY
S21
SELECT PASSWORD TO BE USED FROM ALGORITHM STORING MEMORY
S22
TRANSMIT PASSWORD SELECTED TO PASSWORD COMPARATOR
S23
END

Fig. 6

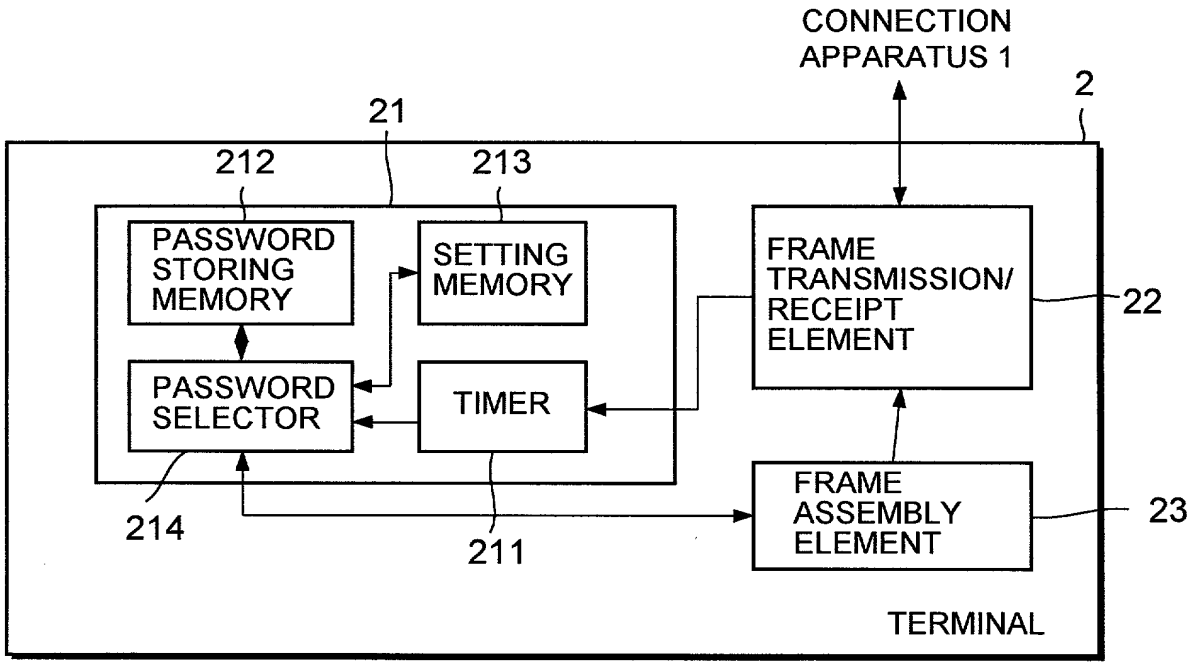
CONNECTION APPARATUS 1
2
21
212
213
PASSWORD STORING MEMORY
SETTING MEMORY
PASSWORD SELECTOR
TIMER
FRAME TRANSMISSION/ RECEIPT ELEMENT
22
FRAME ASSEMBLY ELEMENT
23
214
211
TERMINAL

Fig. 7

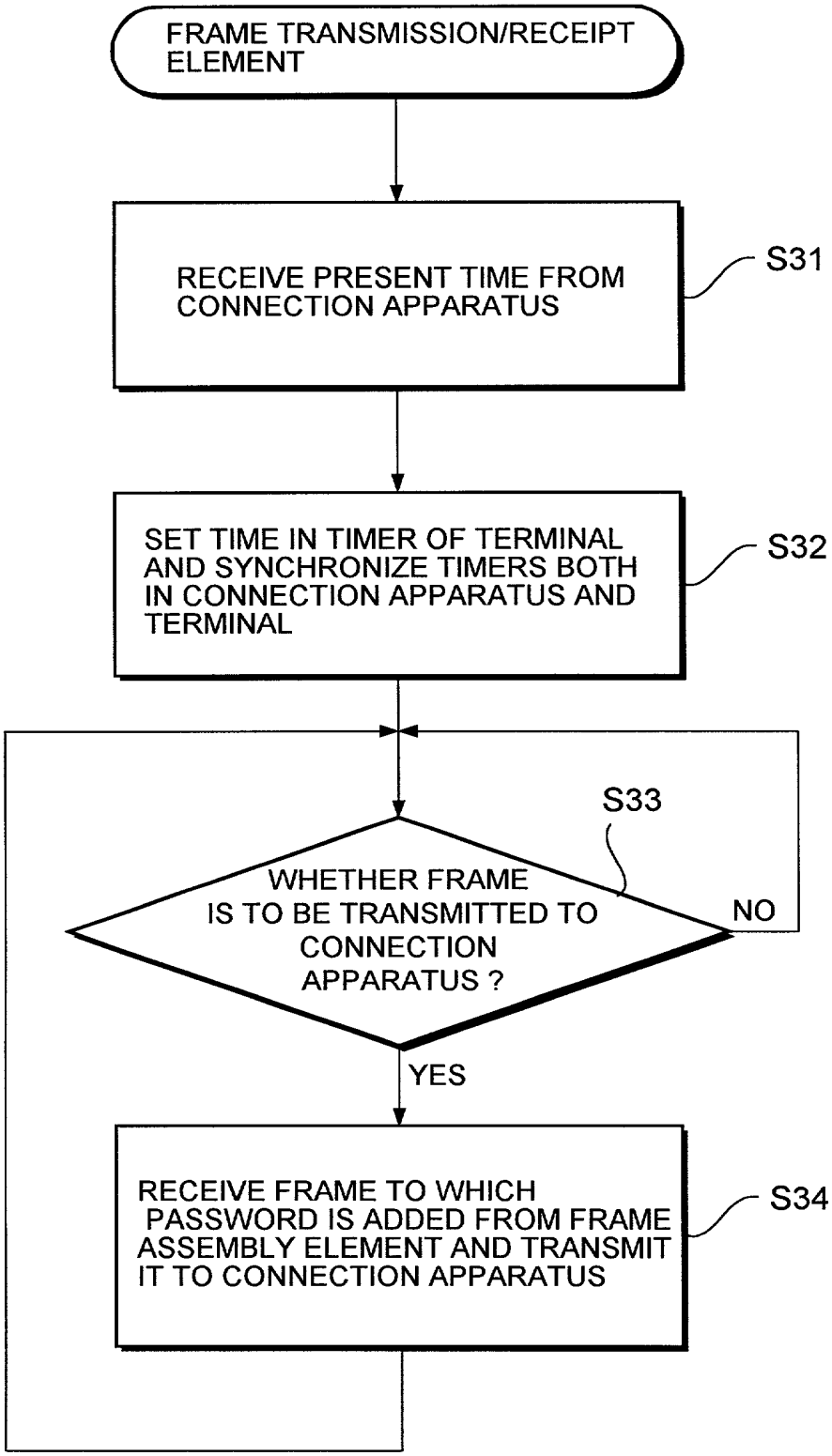
FRAME TRANSMISSION/RECEIPT ELEMENT
RECEIVE PRESENT TIME FROM CONNECTION APPARATUS
S31
SET TIME IN TIMER OF TERMINAL AND SYNCHRONIZE TIMERS BOTH IN CONNECTION APPARATUS AND TERMINAL
S32
S33
WHETHER FRAME IS TO BE TRANSMITTED TO CONNECTION APPARATUS ?
NO
YES
RECEIVE FRAME TO WHICH PASSWORD IS ADDED FROM FRAME ASSEMBLY ELEMENT AND TRANSMIT IT TO CONNECTION APPARATUS
S34

Fig. 8

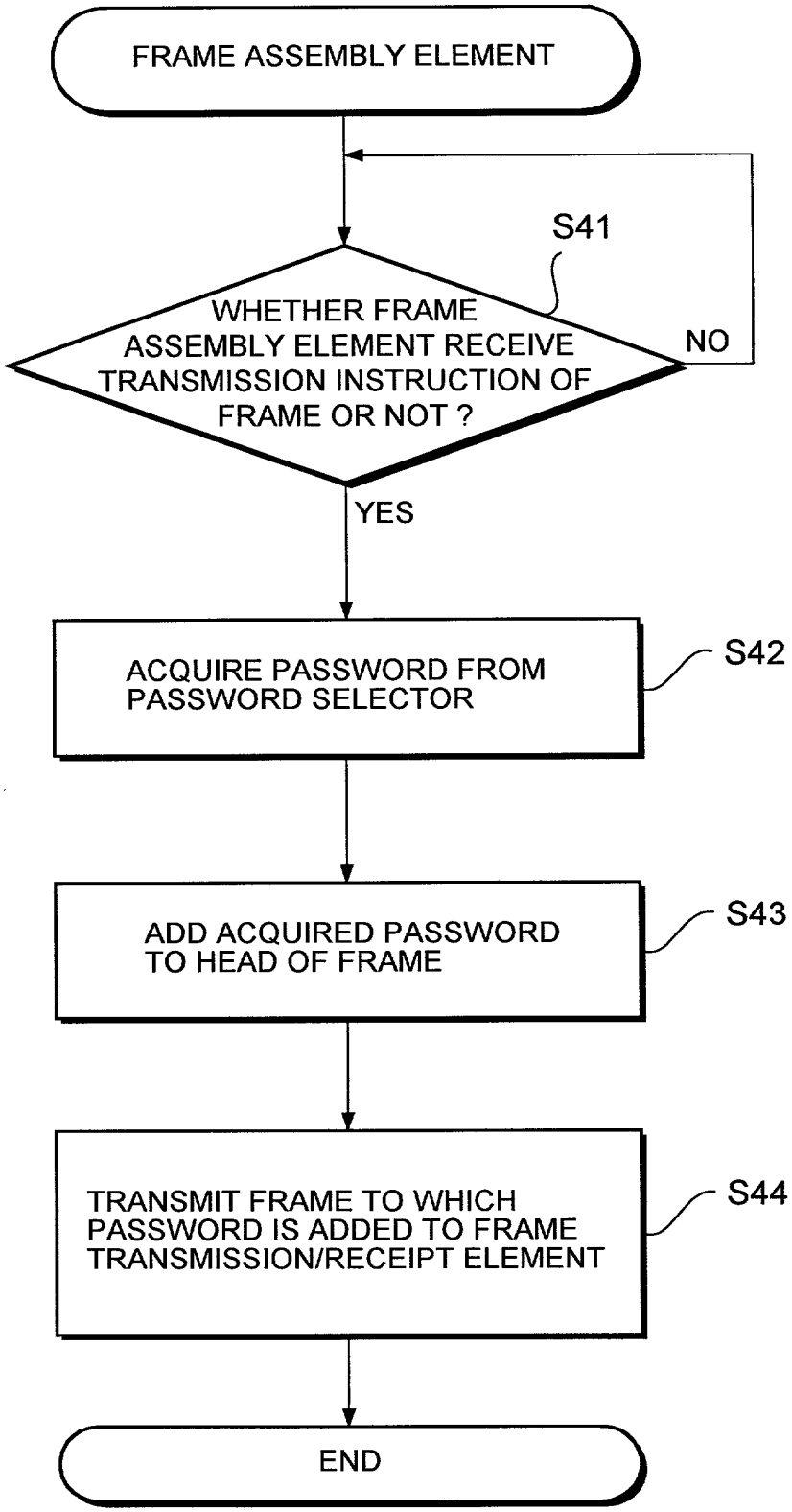
FRAME ASSEMBLY ELEMENT
S41
WHETHER FRAME ASSEMBLY ELEMENT RECEIVE TRANSMISSION INSTRUCTION OF FRAME OR NOT ?
NO
YES
ACQUIRE PASSWORD FROM PASSWORD SELECTOR
S42
ADD ACQUIRED PASSWORD TO HEAD OF FRAME
S43
TRANSMIT FRAME TO WHICH PASSWORD IS ADDED TO FRAME TRANSMISSION/RECEIPT ELEMENT
S44
END

Fig. 9

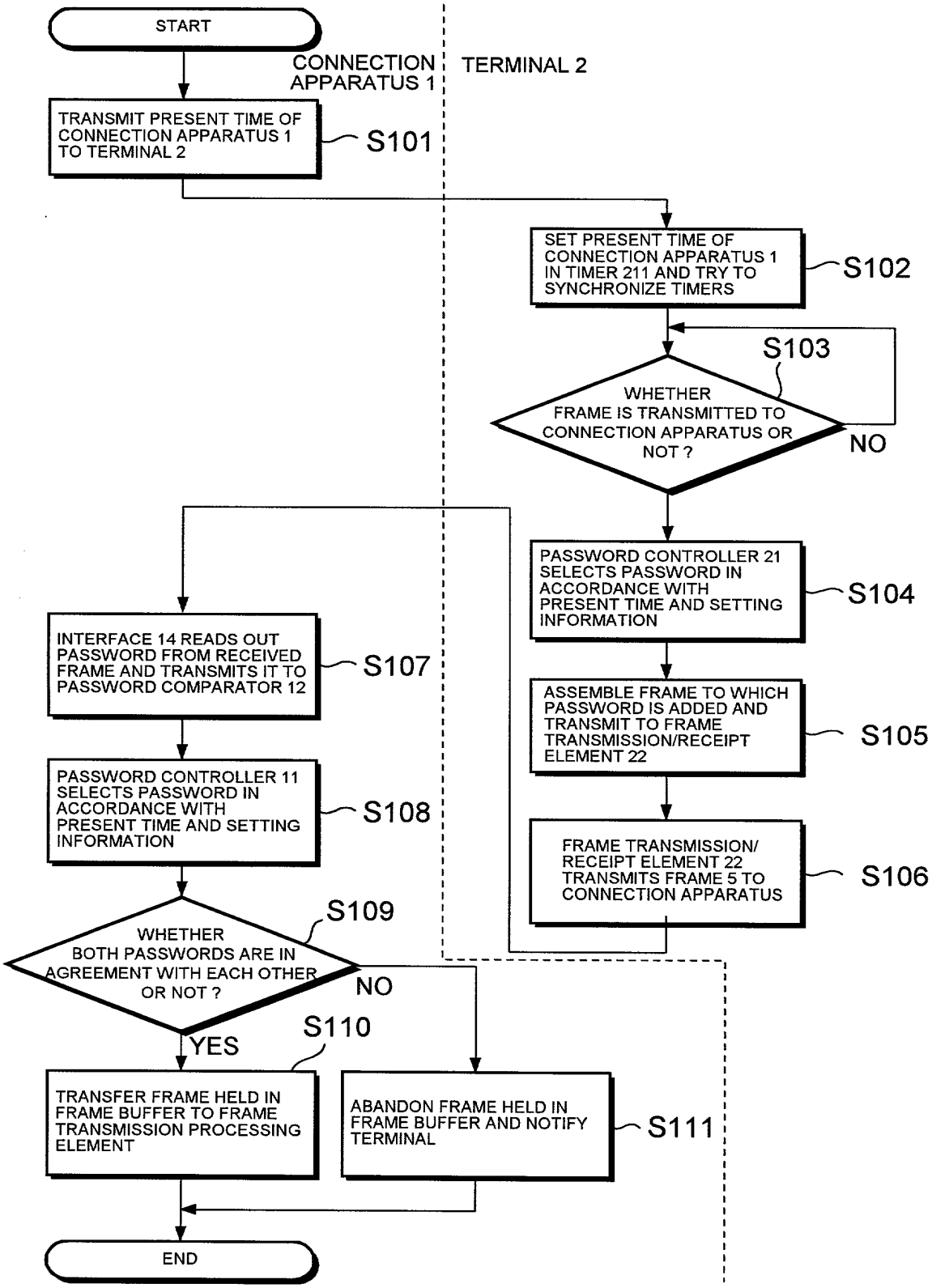
START
CONNECTION APPARATUS 1
TERMINAL 2
TRANSMIT PRESENT TIME OF CONNECTION APPARATUS 1 TO TERMINAL 2
S101
SET PRESENT TIME OF CONNECTION APPARATUS 1 IN TIMER 211 AND TRY TO SYNCHRONIZE TIMERS
S102
S103
WHETHER FRAME IS TRANSMITTED TO CONNECTION APPARATUS OR NOT ?
NO
PASSWORD CONTROLLER 21 SELECTS PASSWORD IN ACCORDANCE WITH PRESENT TIME AND SETTING INFORMATION
S104
ASSEMBLE FRAME TO WHICH PASSWORD IS ADDED AND TRANSMIT TO FRAME TRANSMISSION/RECEIPT ELEMENT 22
S105
FRAME TRANSMISSION/ RECEIPT ELEMENT 22 TRANSMITS FRAME 5 TO CONNECTION APPARATUS
S106
INTERFACE 14 READS OUT PASSWORD FROM RECEIVED FRAME AND TRANSMITS IT TO PASSWORD COMPARATOR 12
S107
PASSWORD CONTROLLER 11 SELECTS PASSWORD IN ACCORDANCE WITH PRESENT TIME AND SETTING INFORMATION
S108
S109
WHETHER BOTH PASSWORDS ARE IN AGREEMENT WITH EACH OTHER OR NOT ?
NO
YES
S110
TRANSFER FRAME HELD IN FRAME BUFFER TO FRAME TRANSMISSION PROCESSING ELEMENT
ABANDON FRAME HELD IN FRAME BUFFER AND NOTIFY TERMINAL
S111
END

Fig. 10

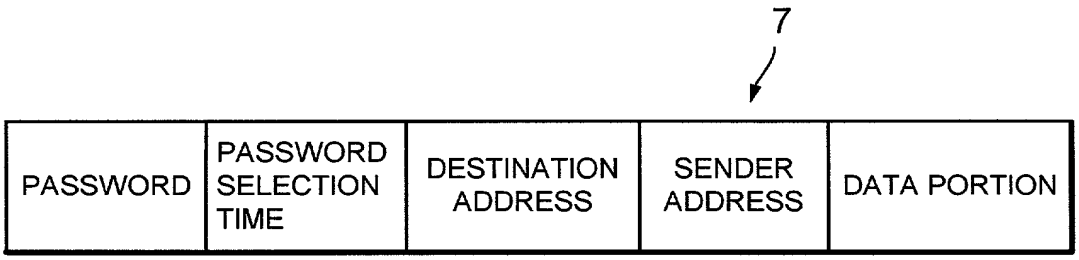
7
PASSWORD
PASSWORD SELECTION TIME
DESTINATION ADDRESS
SENDER ADDRESS
DATA PORTION

Fig. 11

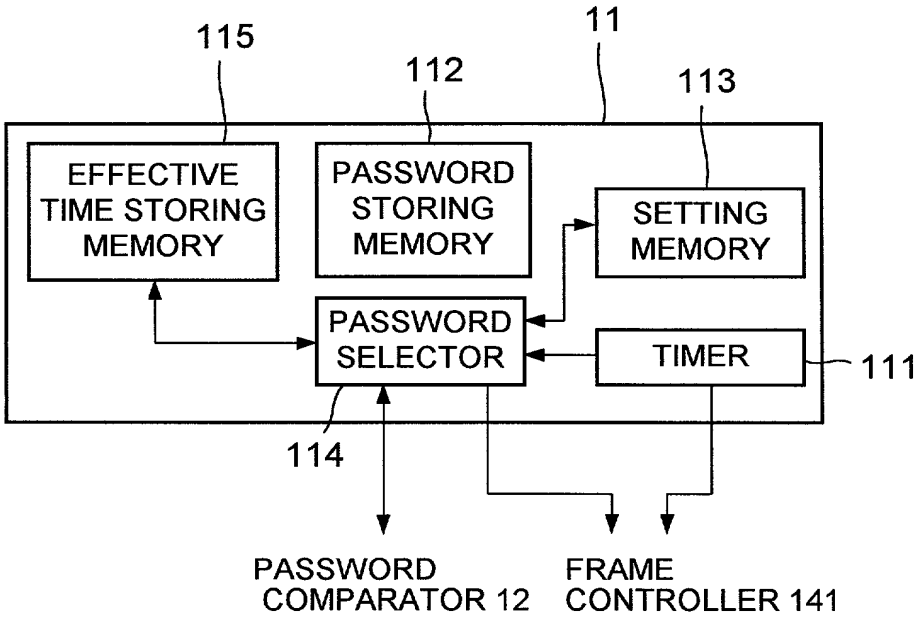
115
112
11
113
EFFECTIVE TIME STORING MEMORY
PASSWORD STORING MEMORY
SETTING MEMORY
PASSWORD SELECTOR
TIMER
111
114
PASSWORD COMPARATOR 12
FRAME CONTROLLER 141

Fig. 12

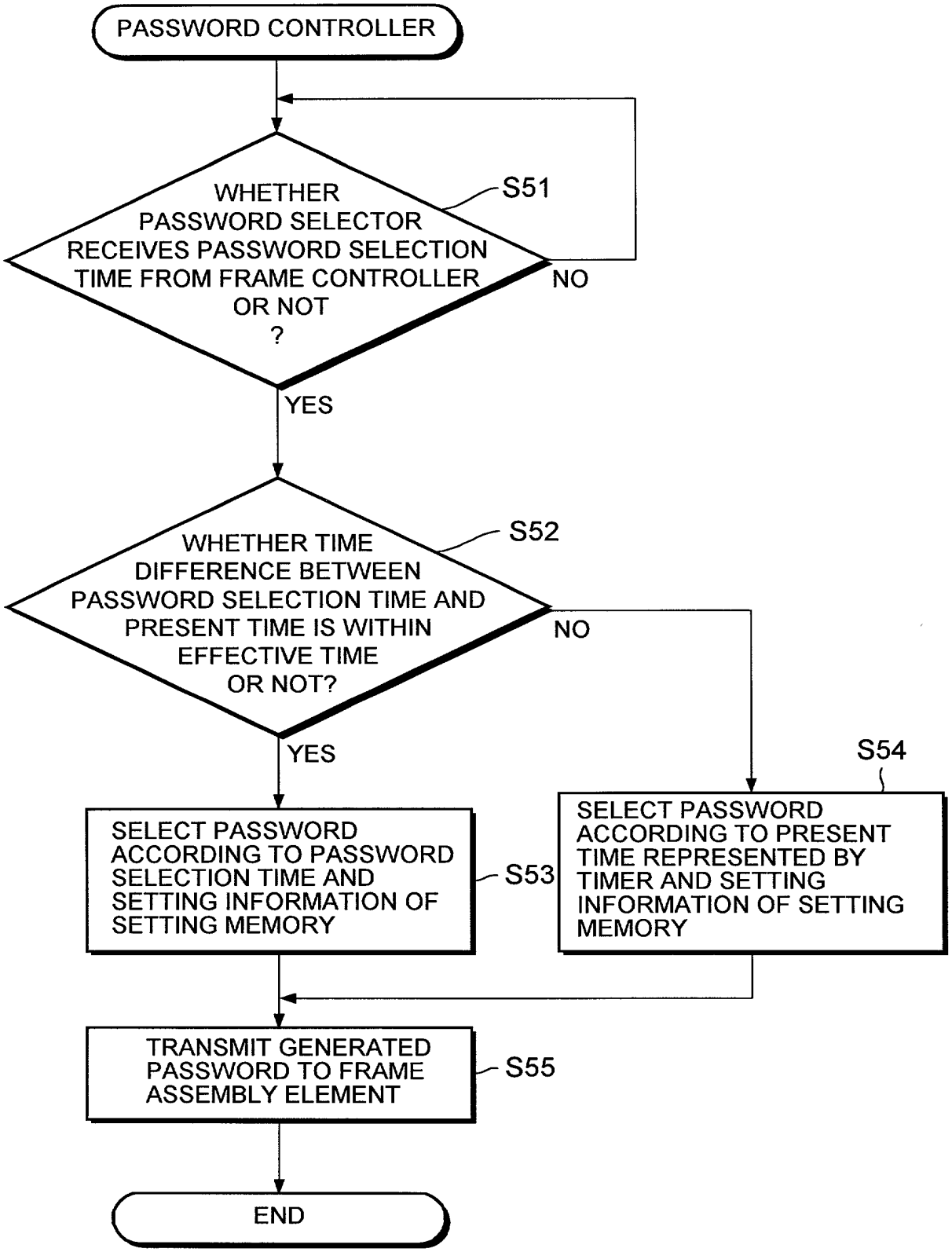
PASSWORD CONTROLLER
WHETHER PASSWORD SELECTOR RECEIVES PASSWORD SELECTION TIME FROM FRAME CONTROLLER OR NOT ?
S51
NO
YES
WHETHER TIME DIFFERENCE BETWEEN PASSWORD SELECTION TIME AND PRESENT TIME IS WITHIN EFFECTIVE TIME OR NOT?
S52
NO
YES
SELECT PASSWORD ACCORDING TO PASSWORD SELECTION TIME AND SETTING INFORMATION OF SETTING MEMORY
S53
S54
SELECT PASSWORD ACCORDING TO PRESENT TIME REPRESENTED BY TIMER AND SETTING INFORMATION OF SETTING MEMORY
TRANSMIT GENERATED PASSWORD TO FRAME ASSEMBLY ELEMENT
S55
END

Fig. 13

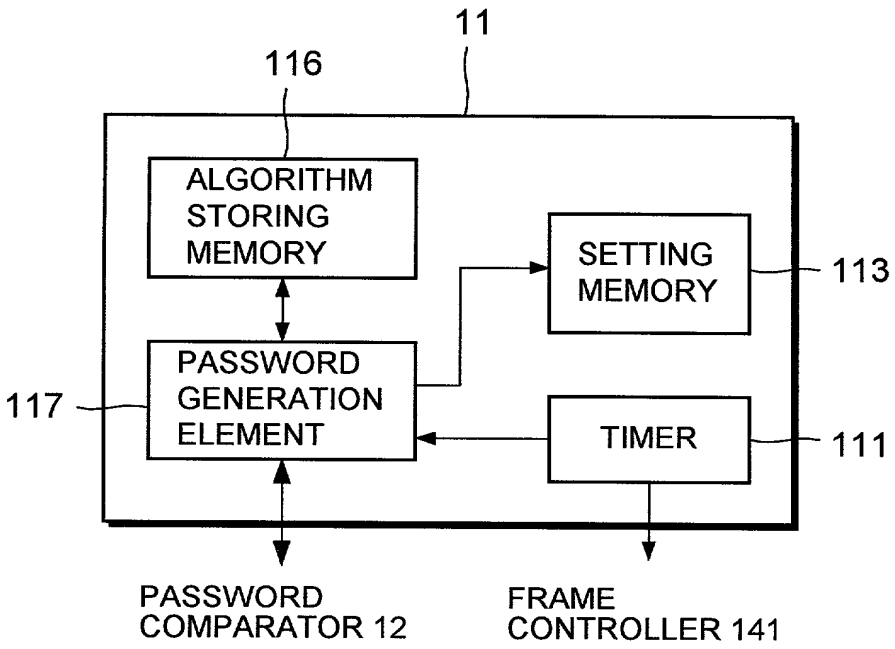

Fig. 14

8

TIME	ALGORITHM TO USED
0:00~0:04	ALGORITHM A
0:05~0:10	ALGORITHM B
⋮	⋮
23:55~23:59	ALGORITHM X

Fig. 15

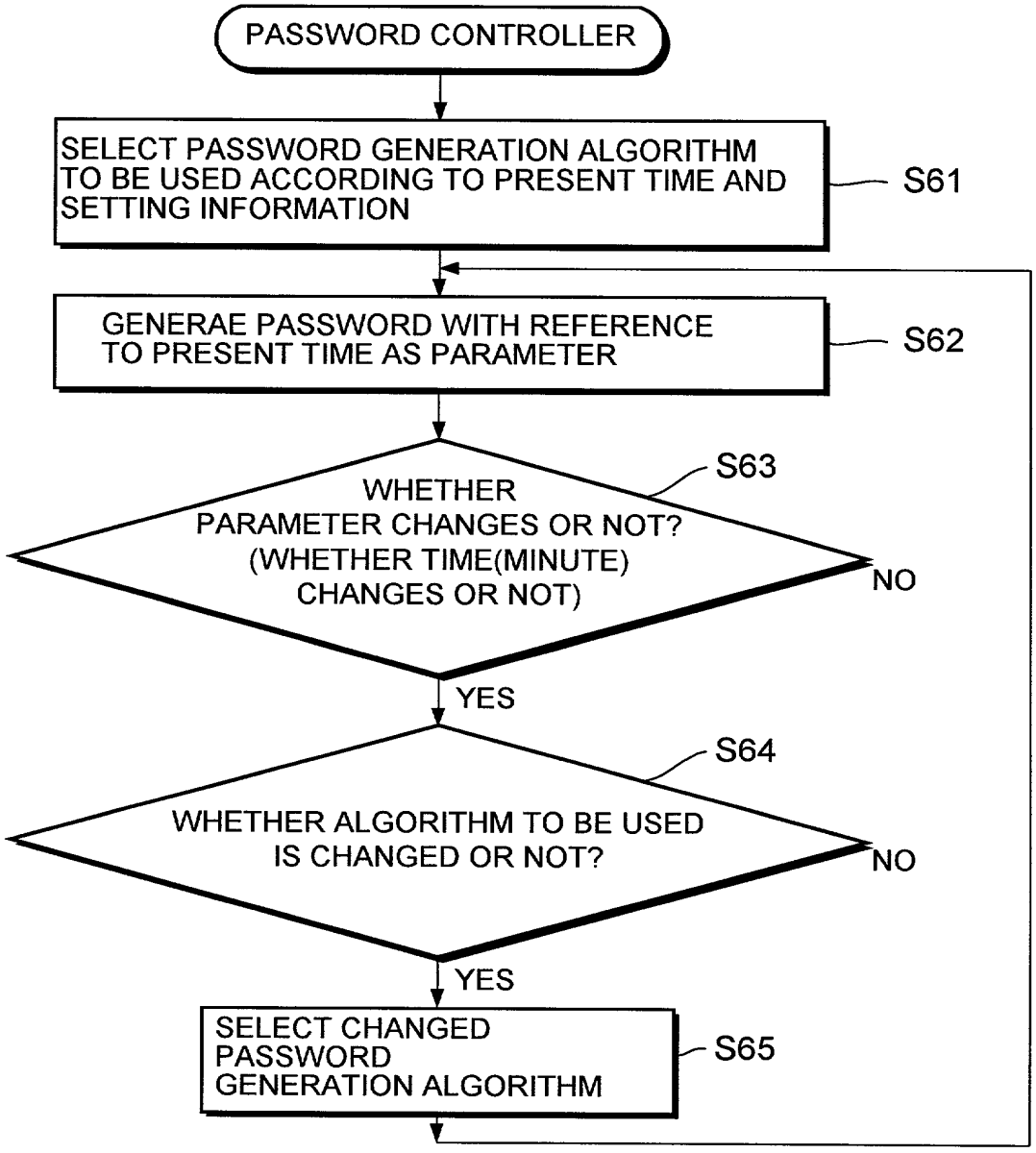
PASSWORD CONTROLLER
SELECT PASSWORD GENERATION ALGORITHM TO BE USED ACCORDING TO PRESENT TIME AND SETTING INFORMATION
S61
GENERAE PASSWORD WITH REFERENCE TO PRESENT TIME AS PARAMETER
S62
WHETHER PARAMETER CHANGES OR NOT? (WHETHER TIME(MINUTE) CHANGES OR NOT)
S63
NO
YES
WHETHER ALGORITHM TO BE USED IS CHANGED OR NOT?
S64
NO
YES
SELECT CHANGED PASSWORD GENERATION ALGORITHM
S65

Fig. 16

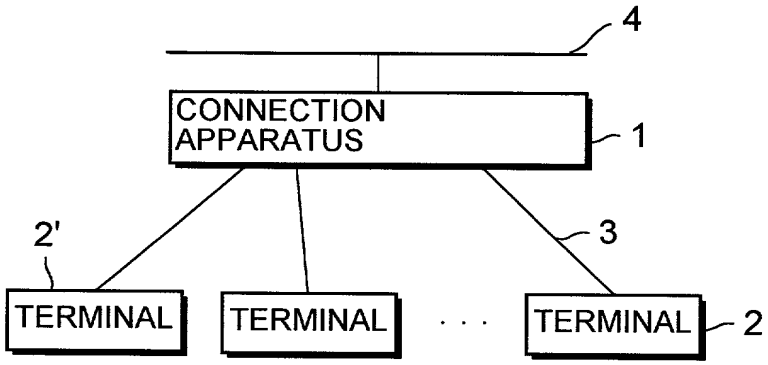
4
CONNECTION APPARATUS
1
2'
3
TERMINAL
TERMINAL
TERMINAL
2

Fig. 17